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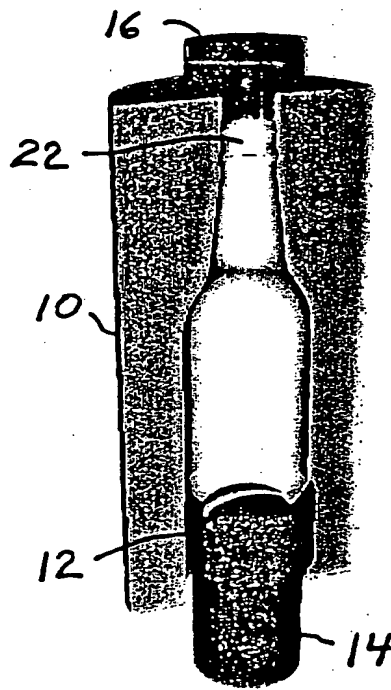
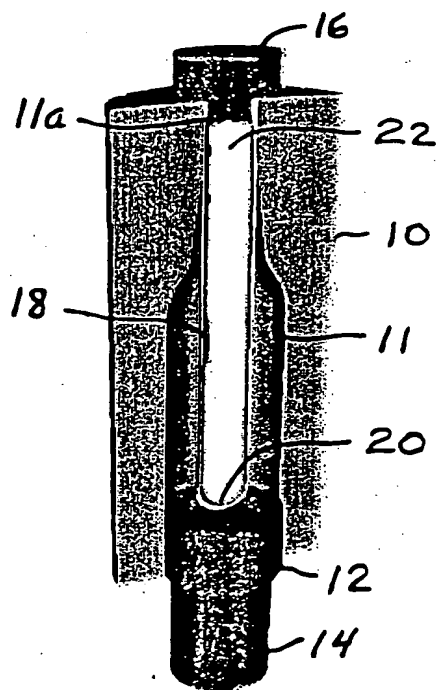
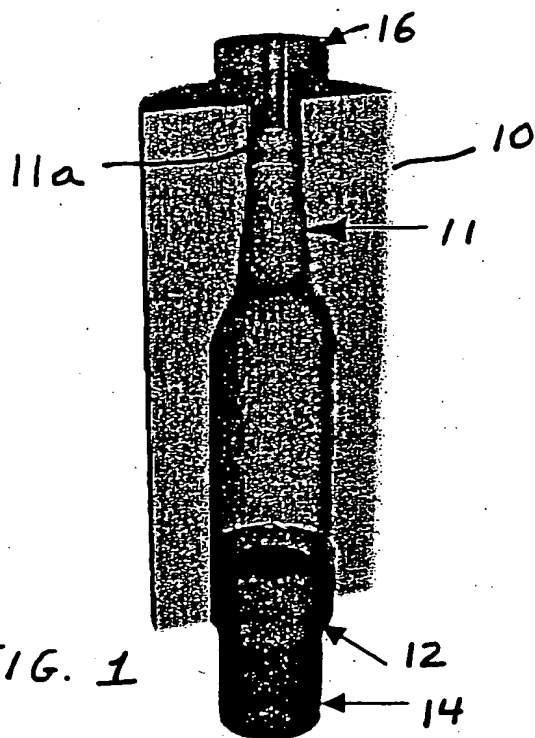
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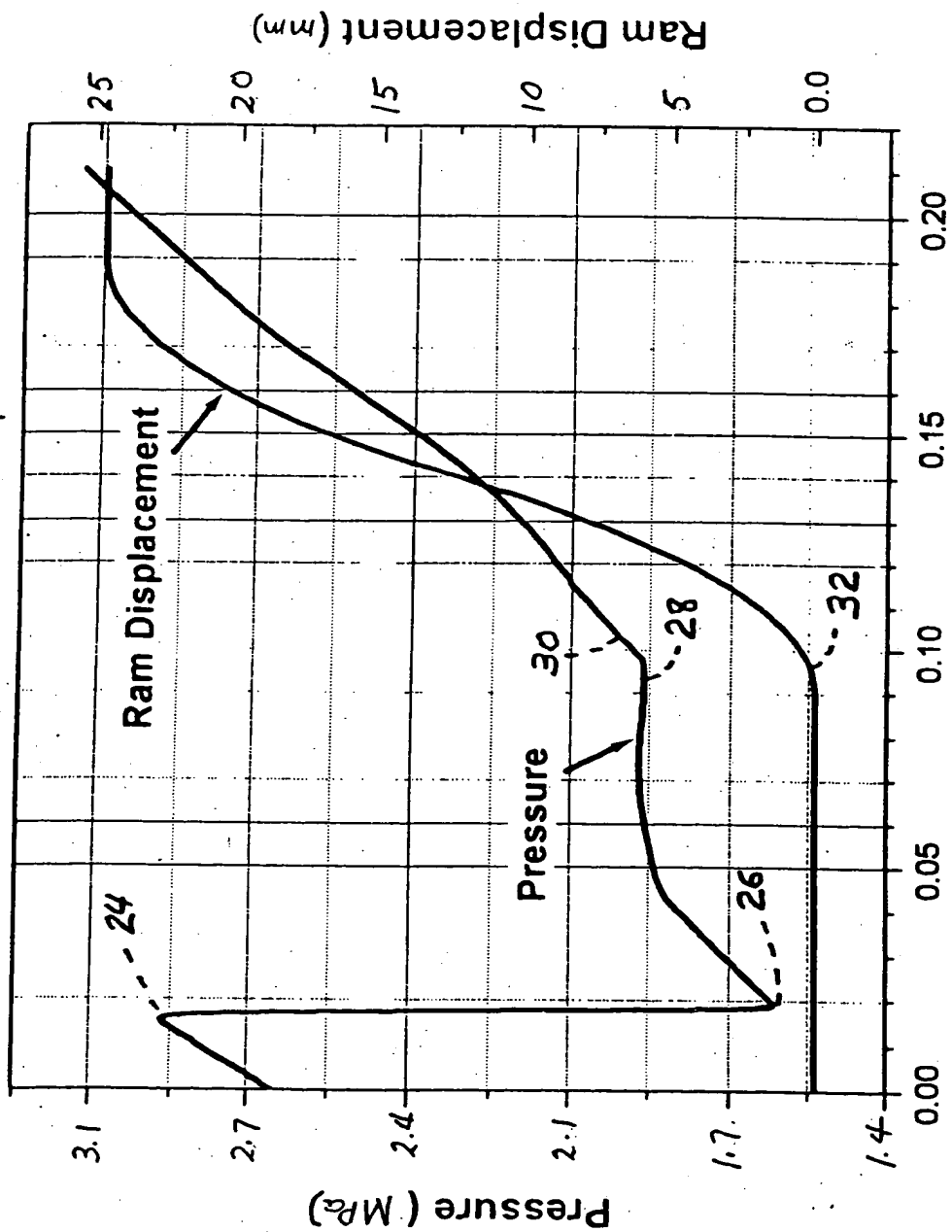
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Hydroforming Pressure Loading and Ram Displacement



Time (s) FIG. 3

Ram Displacement (mm)

Pressure (MPa)

0.00 0.05 0.10 0.15 0.20

3.1
2.7
2.4
2.1
1.7
1.4

Ram Displacement

Pressure

30

28

26

32

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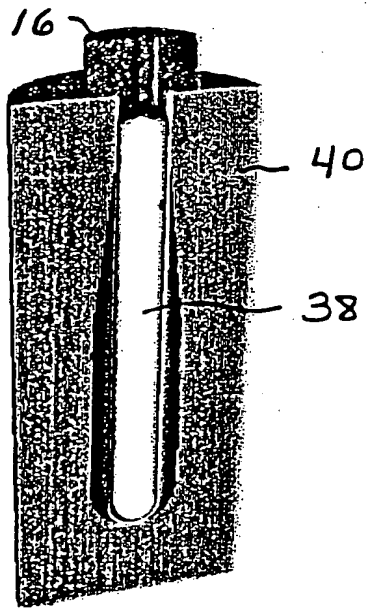


FIG. 4A

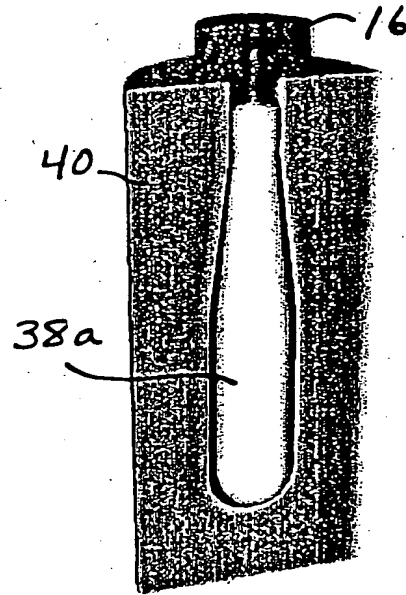


FIG. 4B

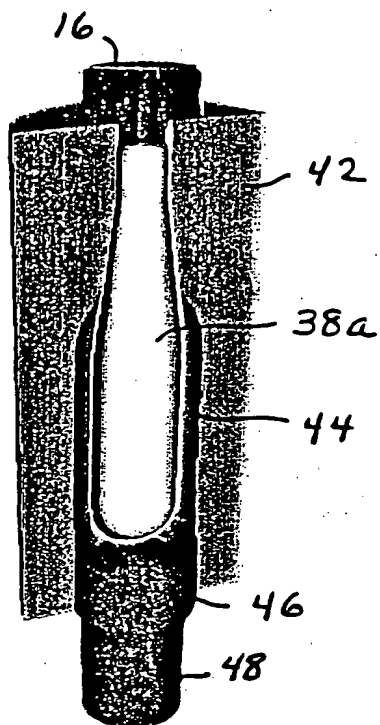


FIG. 4C

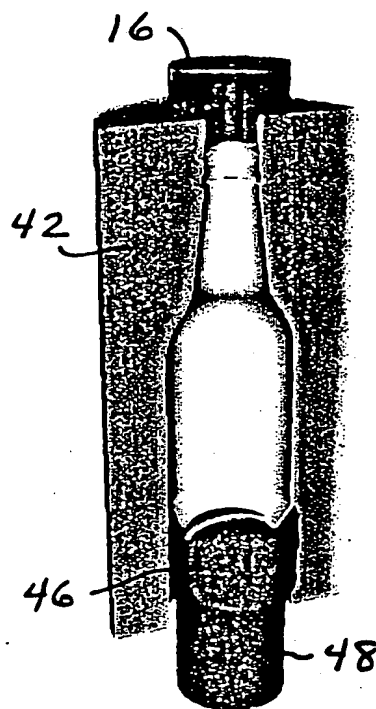
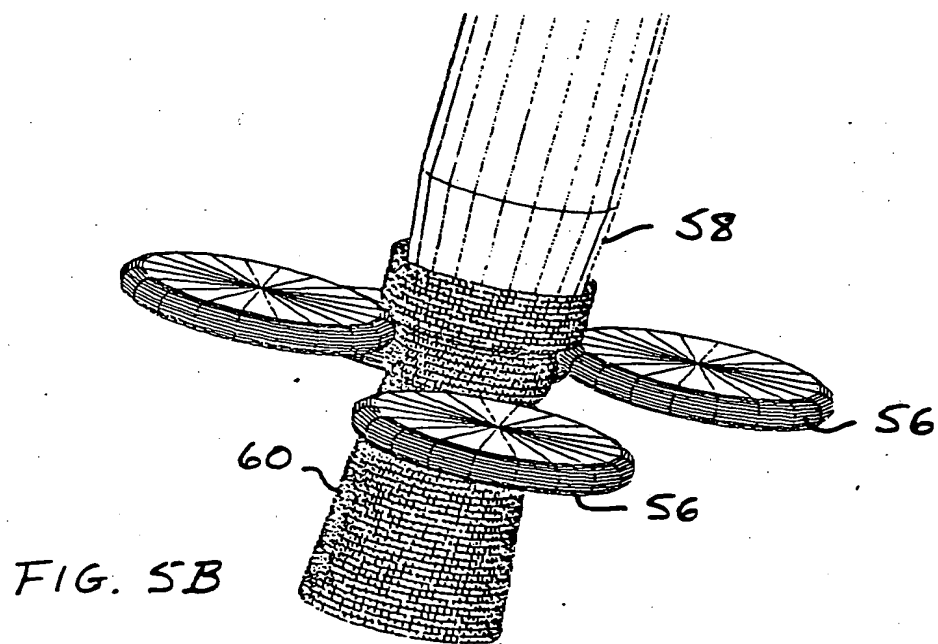
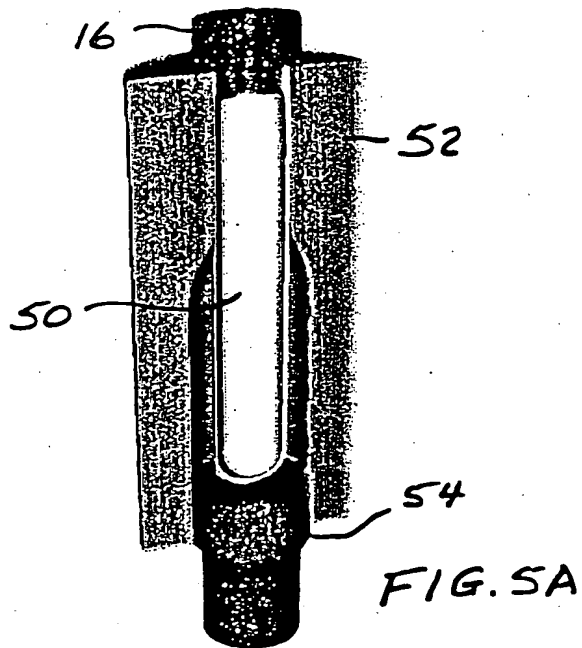
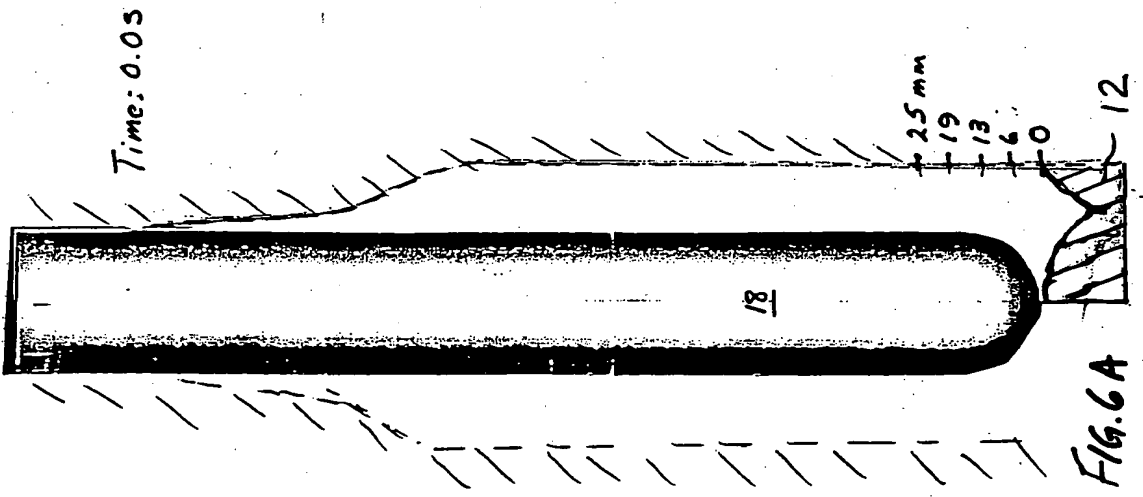
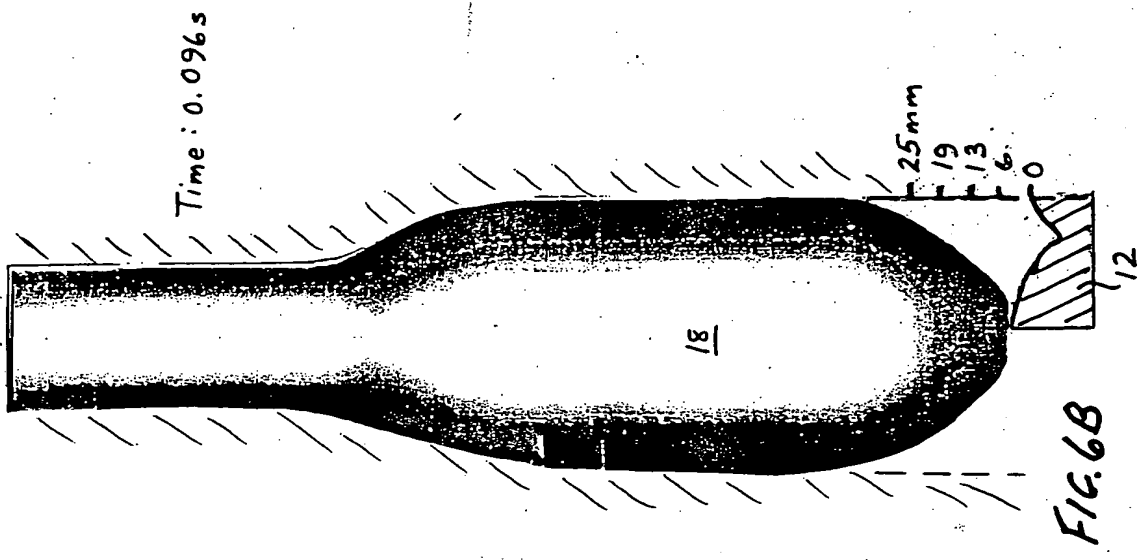


FIG. 4D





Time: 0.134s

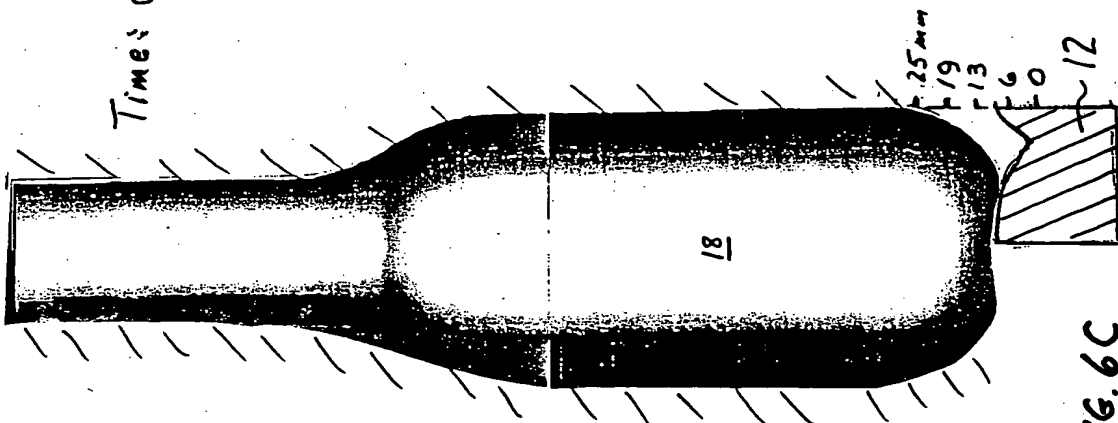


FIG. 6C

Time: 0.21s

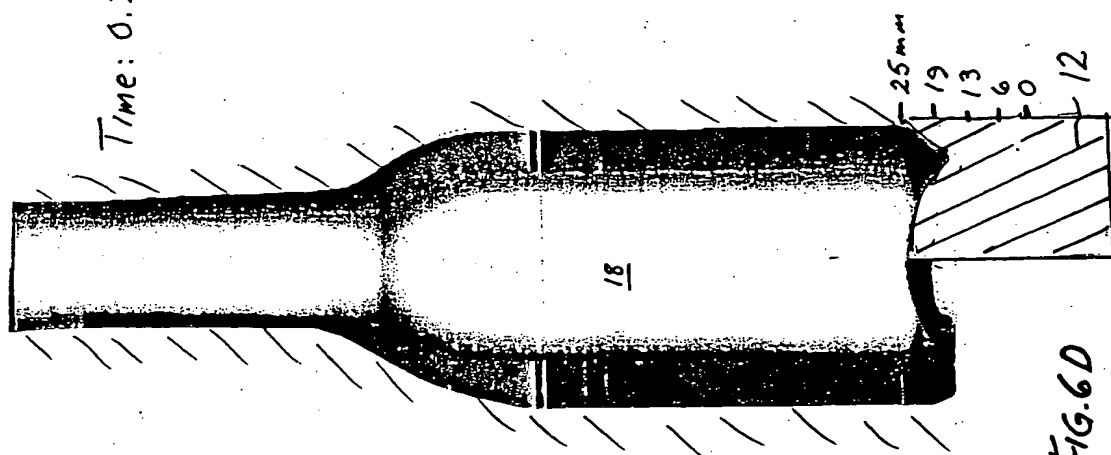


FIG. 6D

Pressure History During Forming

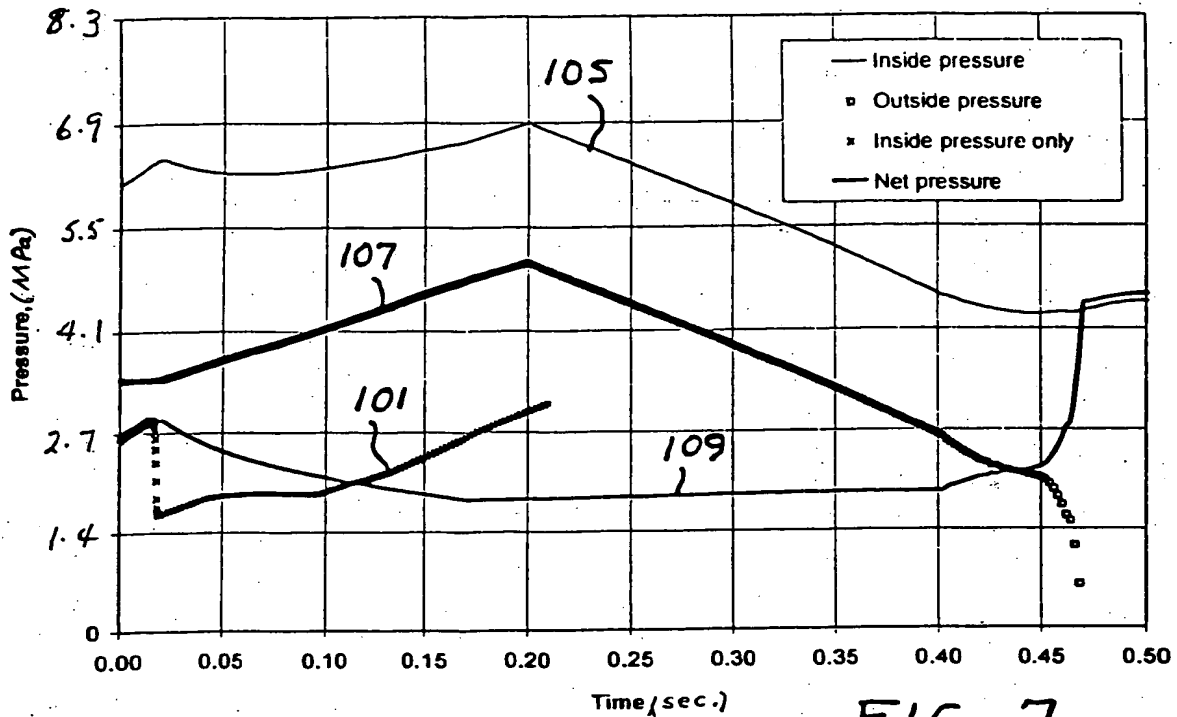


FIG. 7

Strain Variation During Forming at Element (With/without back pressure, BP)

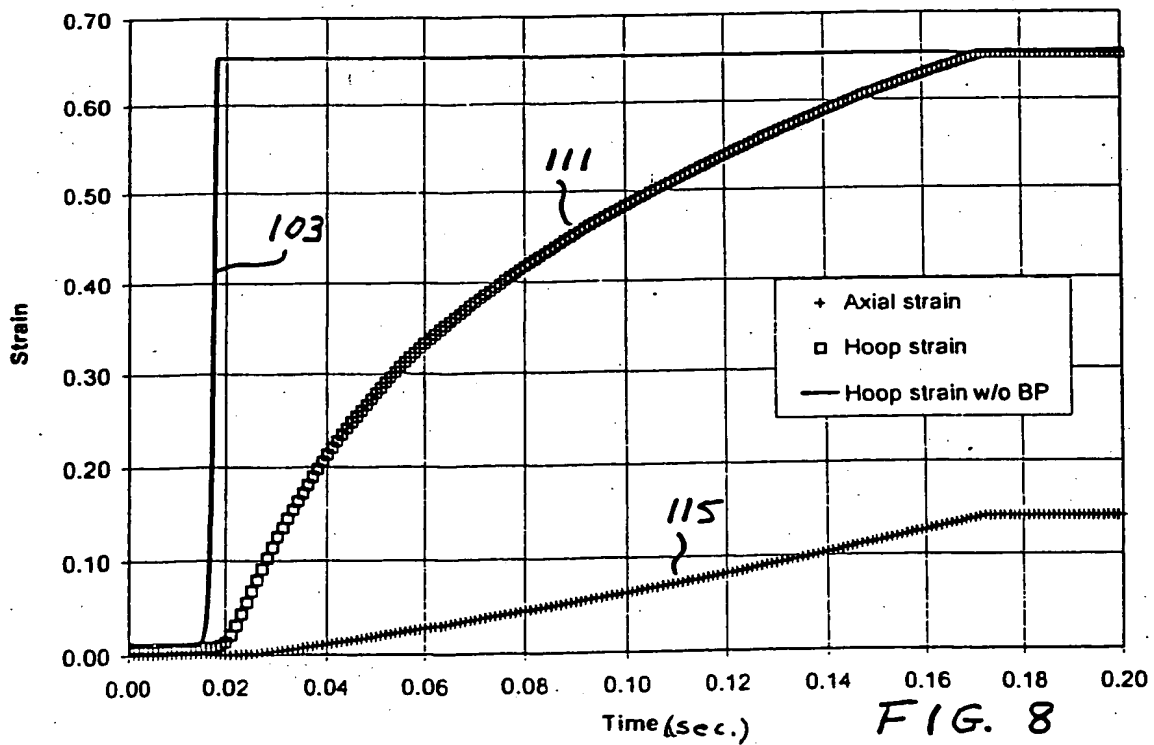


FIG. 8

Pressure history during forming
 (with strain rate dependent material property)

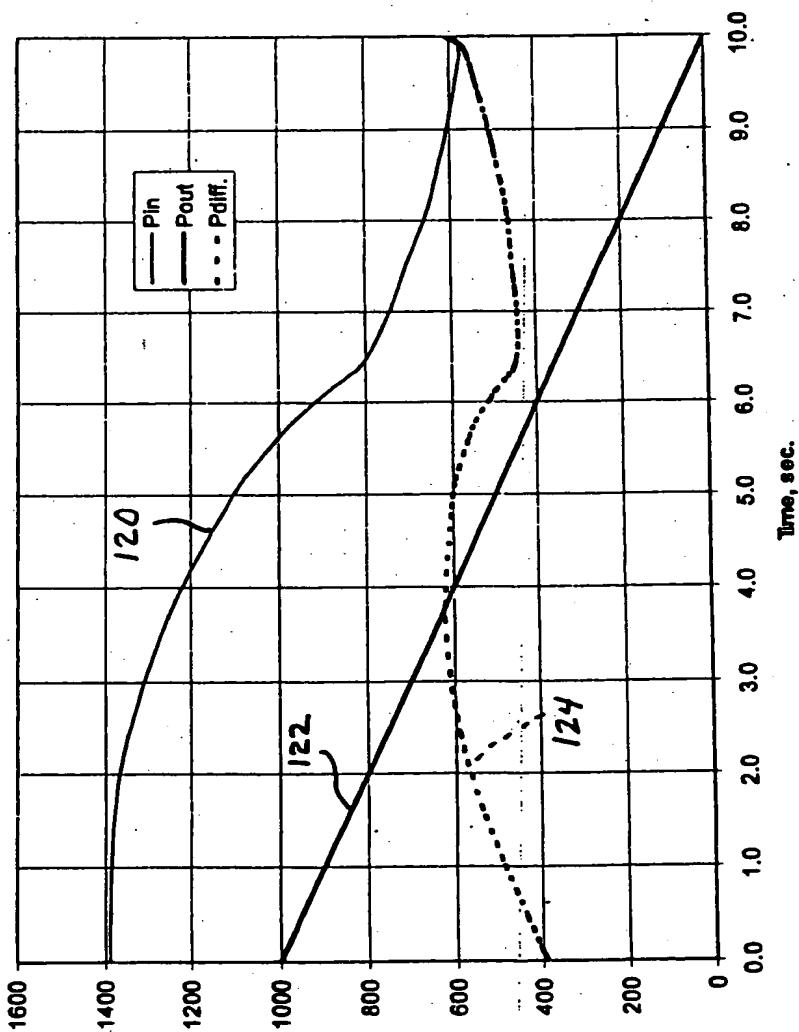


FIG. 9

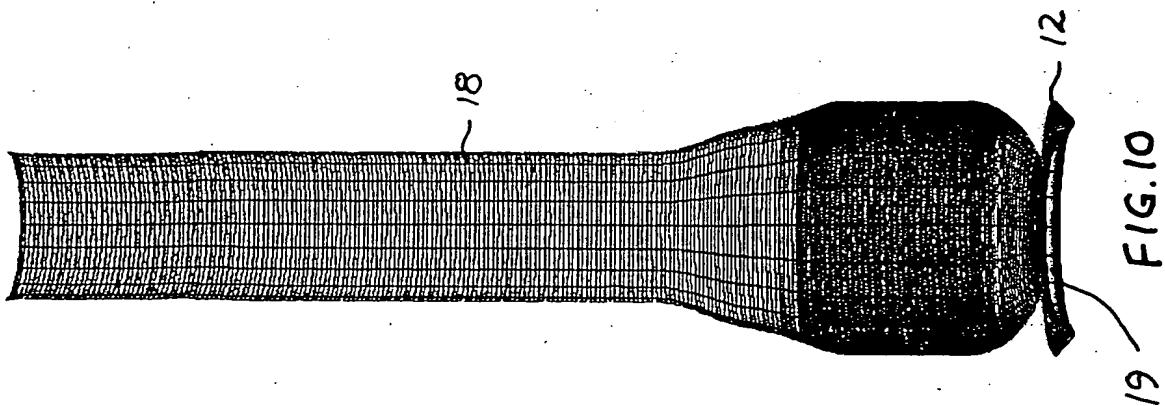


FIG. 10

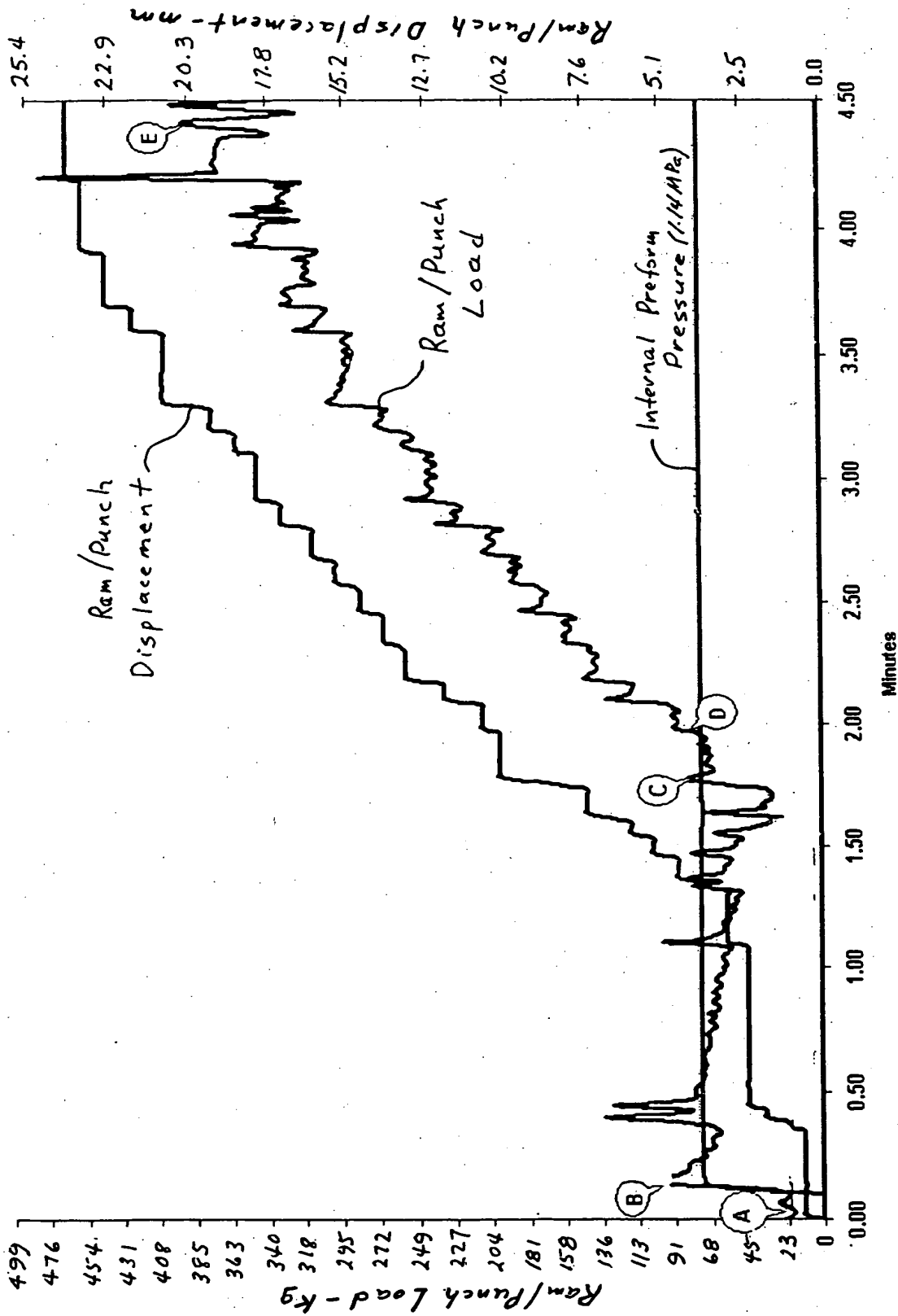


FIG. 11

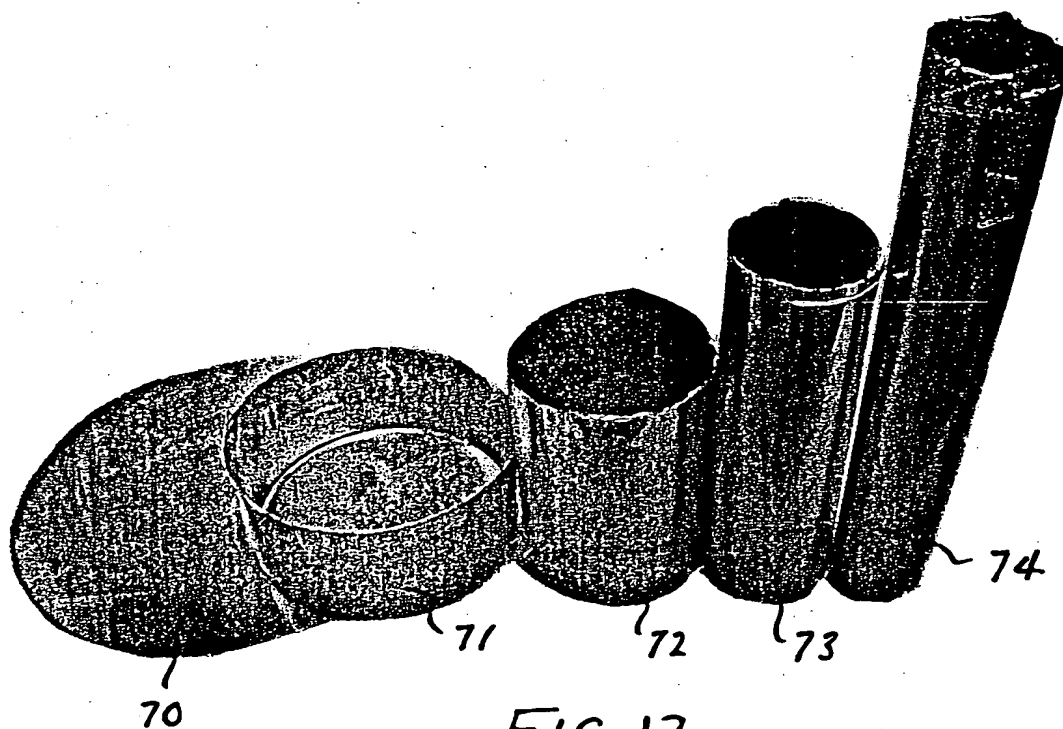


FIG. 12

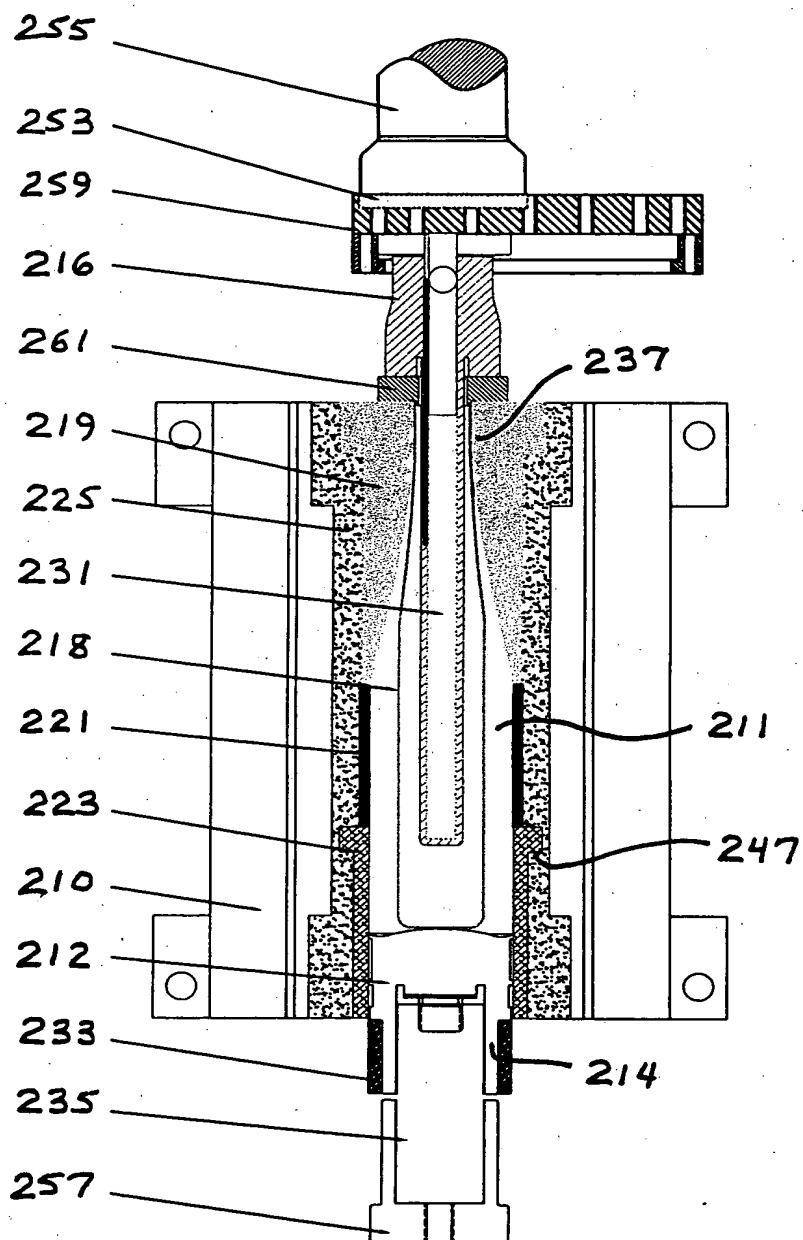


FIG. 13

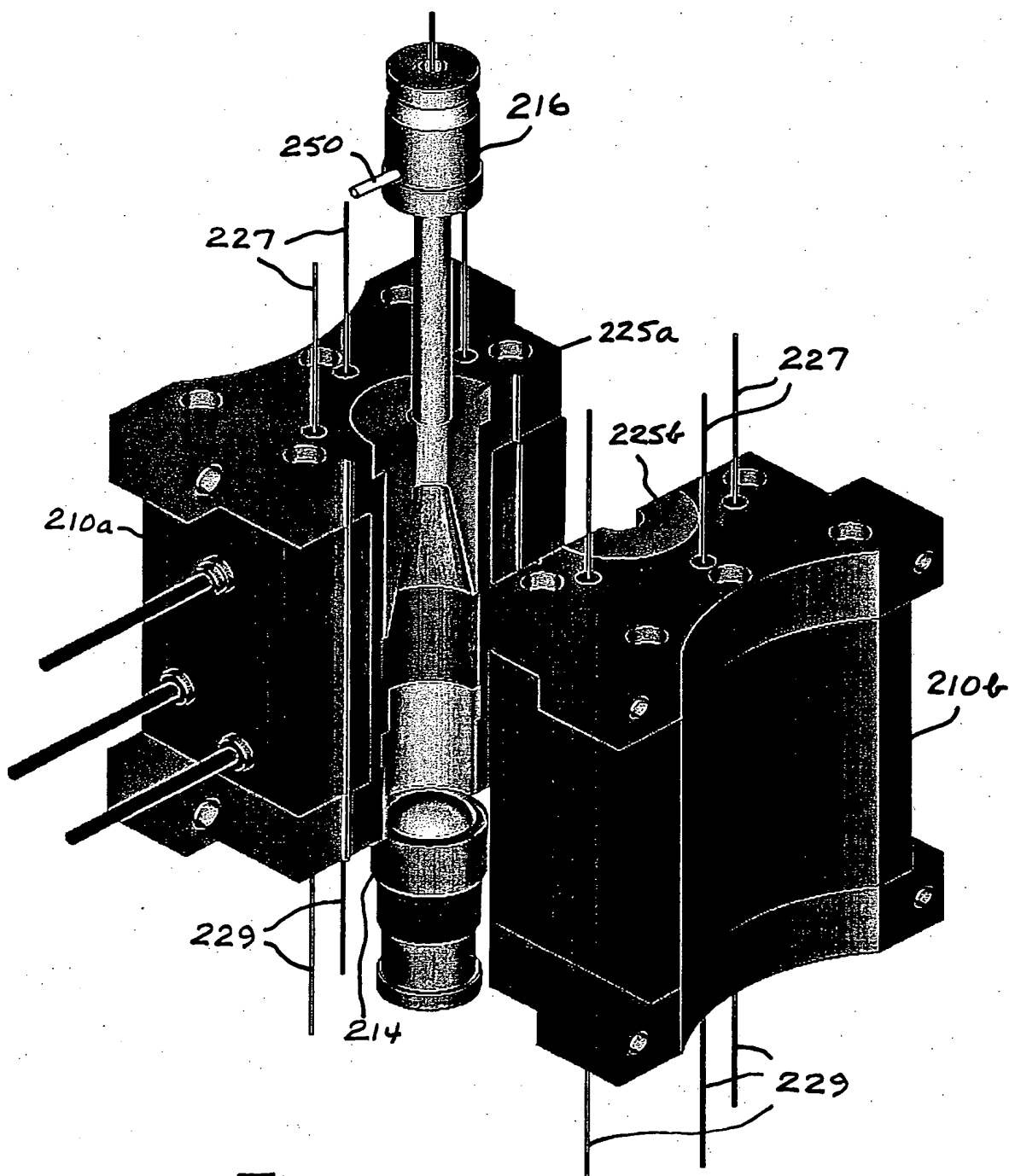


FIG. 14

